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## WHAT IS THE FUTURE OF AMERICAN COTTON?

Probably the greatest immediate effect of the American Civil War upon Europe was the stoppage of cotton supplies. How severe was the injury done may be seen from the fact that the American cotton exports to England which had been 2,528,274 bales in 1860, dropped to 7,091 in 1862 and did not again exceed 100,000 until 1866; while the entire European receipts from the United States, which had been 3,535,373 bales in 1860, in no year between 1862 and 1865 inclusive exceeded 150,000 bales, and did not again exceed 3,000,000 bales until 1878.<sup>1</sup>

Naturally the effect of this almost total cessation of supply for four years and the greatly reduced supplies for thirteen years longer was felt with great severity. Only two other countries, India and Egypt, were then capable of supplying any quantity to fill the demand, and Indian cotton was of much inferior quality. The necessities of the spinners, however, were so pressing and the prices paid so great that a supreme effort was made by both governments and cultivators to supply the demand. Yet the quantity shipped to European ports from all producing countries in the years between 1861 and 1865 in no year exceeded 2,500,000 bales and only averaged 1,750,000, or about one-half of what the United States had previously shipped. When the American exports were resumed, production both in India and Egypt declined to its previous average and many other countries entirely ceased cotton culture.<sup>2</sup>

In 1880 the division of tropical Africa among European nations took place. Madagascar was occupied and Tunis acquired by France, Russia conquered Turkestan, Farther India was shared between Great Britain and France, and the Islands of the Pacific were divided. Every one of these widely separated lands seemed

<sup>1</sup> U.S. Bureau of Census, *Bulletin No. 113*, 1911, p. 16.

<sup>2</sup> *History of the Cotton Famine*, London, 1865; *The Cotton Trade of Great Britain*, Ellison, London, 1886; *The Production and Consumption of Cotton*, F. A. Conkling, New York, 1865, pp. 7, 12, 27.

well adapted to successful cotton culture and efforts were quickly made to introduce it.

But successful results have been slow to obtain. Time and again statements have been made that Europe was soon to become independent of the American cotton supply, yet year after year has brought disappointment and almost entire discouragement. Meanwhile the expansion of the world's spinning capacity has been constant, and especially so in the last decade. The spindles of the world, which numbered 78,000,000 in 1880, 88,900,000 in 1890, and 105,681,000 in 1900, were 137,792,000 in 1911, an increase of 80 per cent in thirty years and of over 30 per cent in the last decade. This growth was especially great in the United States, which has increased its spindles from 10,653,145 in 1880 to 29,522,597 in 1911, or over 175 per cent, while since 1900 the increase has been over 50 per cent.<sup>1</sup>

This immense spinning development has caused a greatly increased world's consumption of raw cotton, which has grown from 7,414,000 bales in 1880 to 15,177,000<sup>2</sup> in 1900 and 19,013,000 in 1911.<sup>3</sup> Of this last amount 11,408,000 bales or almost 60 per cent were supplied by the United States and only 7,600,000 bales by all other countries.<sup>4</sup> This evidence of the sources of supply shows the almost complete present dependence of the world's spinners on the outcome of the American crop and has led American cotton growers, merchants, and exporters to believe that this state of affairs would continue indefinitely and that the United States would fix the cotton prices of the world. Naturally such conditions have been taken advantage of by speculators, and cotton, properly an article of absolutely necessary family use, as much so as bread, sugar, or meat, has become the favorite gamble of the exchanges. Prices have been forced up to figures which almost prohibit its use among its greatest consumers—the toiling millions of India and China, for example, to whom an increase of a few

<sup>1</sup> *Encyclopaedia Britannica*, art. "Cotton," p. 292; U.S. Bureau of Census, *Bulletin No. 113*, 1911, pp. 11, 22.

<sup>2</sup> U.S. Bureau of Statistics, *Cotton Trade and the World's Cotton Supply*, March, 1890, p. 2626.

<sup>3</sup> U.S. Bureau of Census, *Bulletin No. 113*, 1911, p. 22.

<sup>4</sup> *Ibid.*, p. 22, Diagram 3.

cents in the cost of their meager garments makes acquisition an impossibility. To the cotton spinner such conditions are an absolute menace to profitable continuance in operation. When values of raw materials are fixed by artificial markets not only beyond his control but impossible for him to forecast even for a short time, while his consumer thousands of miles distant may be driven from purchase by the rapid resulting price changes, successful and profitable conduct of business becomes impossible. The only hope of the spinner is in a free market, uncontrolled by speculative manipulation, with a supply furnished by many producers. Whether that hope has any basis in existing conditions of development is worthy of thorough and careful inquiry.

For the successful introduction of new agricultural methods among widely separated peoples, generally of limited intelligence, in so many lands and climates, and to whom a civilized government is still a novelty, many preliminary steps are necessary. It must first be proven that the soil and climatic conditions are suitable for successful culture. This may require a long time, since much must depend upon normally average conditions of rainfall and temperature. With cotton, especially, insect pests and diseases must be investigated and methods found to combat or prevent them. This requires the training of specialized scientific forces by years of research. Therefore merely to ascertain the natural conditions for successful cultivation demands much time. Neglect of these preliminary researches has often caused delays and discouragement. But in the last two decades, where modern cotton cultivation has been introduced these have been the first steps taken. Indeed, in the British West Indies, where such a phenomenal success has been achieved in the last ten years, complete investigation of every detail was made by skilled agricultural experts before the first field of commercial cotton was planted.

One of the most difficult problems was to teach the native laborer to cultivate the plant properly. In some countries, such as parts of Africa, Borneo, or New Guinea, he knew almost nothing of the purely agricultural labor involved in tilling the soil and cultivating a plant. As a rule, he has little intelligence, and the

utmost patience is required to teach each successive step in cotton-growing and the necessity therefor. He is easily discouraged, and failure to succeed in any new endeavor quickly causes abandonment of effort. To overcome all this requires years of teaching. In more civilized countries, where agriculture in its simpler form has long been practiced, the peasant through inherited custom has learned to cultivate but few products, year in and year out, in the same way that his ancestors did. He knows nothing else, has no confidence in new crops, and is very slow to experiment, as at the best he is living almost in poverty, dependent absolutely on the success of his harvest. Therefore such laborers must be taught, not only how to cultivate the new plant, but also to have confidence in a profitable outcome. How difficult such an educational course may prove and how long a time may be necessary for its success may be seen from the slow progress made in teaching our own cotton growers, infinitely better informed in many ways, to use more intelligent methods of cultivation.

Cotton differs from most of the agricultural products in that, even when it has been successfully grown and picked, the seeds are difficult to remove. In former time this was entirely done by hand, and even today in China, Persia, parts of Turkestan, India, and some other countries that method is still used. Naturally it is only possible where labor is extremely cheap, yet it is estimated that in India, whose cotton development England has been aiding for fifty years, one-fourth of the crop is thus "ginned by hand." In the entire Indian Empire in 1910 there were but 859 cotton ginneries in operation.<sup>1</sup> In the Province of Madras with 1,002,000 acres in cotton, there were only eighteen ginneries and in Burma with 196,000 acres but two ginneries.<sup>2</sup> As a result many farmers transport cotton great distances to ginneries, often 100 miles, sometimes 200 miles. As the natives use ox-carts, this takes a long time, the cost of production is greatly increased, and the farmer's profit reduced. The Indian cotton crop in 1910 covered about 20,000,000 acres,<sup>2</sup> so that there were about 23,000 acres to each ginnery. In the United States, with 32,403,000 acres in cotton in

<sup>1</sup> *International Federation of Master Cotton Spinners*, Barcelona, 1910, p. 120.

<sup>2</sup> *U.S. Daily Consular Reports*, No. 282, December 2, 1911, p. 1131.

1910, there were over 26,000 active ginneries,<sup>1</sup> or less than 1,250 acres to each. In districts in Africa where gins are still very few, natives will walk long distances carrying a few pounds of cotton to the gin. Under such circumstances production is very greatly reduced.

In most of the countries in which its cultivation was introduced, cotton seldom had a reliable market. It was therefore necessary to provide one, and in the earlier days this was generally undertaken by the government. But as a practical commercial proposition such a course could not continue indefinitely. There must sooner or later be a time when the farmer can rely upon competing buyers at profitable prices, and this is now generally obtained through native buyers who travel around the country purchasing small quantities.

Probably the greatest drawback was the absence of cheap transportation. Very few of these countries have any roads. Water carriage was seldom possible. The distances from the sea are also often very great. Szechuan, the principal cotton growing province of China, with a population of 68,000,000, is 1,600 miles from the sea at Shanghai. Ferghana, in Eastern Turkestan, with its fertile cotton fields, was 1,500 miles from the nearest Russian railway. El Obeid, in the Egyptian Sudan, was 1,100 miles from the railway at Abu Hamed. Northeastern Rhodesia was 1,000 miles from the railway at Buluwayo and 3,000 from its seaport at Cape Town. Kano, in Northern Nigeria, the center of one of the richest cotton territories in the world, was over 800 miles from the sea. And these are only a few instances of the great distances often necessary to traverse to reach a market.

The old methods of transportation are of the crudest class. In Western China the common vehicle even for passenger traffic is the wheelbarrow; so general is its use that in towns having street pavements there are grooves worn by the wheelbarrow tires. In many parts of Western Africa all loads are carried on the head, even for long distances. In Yahrkand in Western Chinese Turkestan, Crosby in his travels in 1907 met caravans of diminutive asses, carrying small bales of cotton, crossing a mountain pass

<sup>1</sup> U.S. Bureau of Census, *Bulletin No. 114*, 1912, Tables 12, 14.

on their way to the Russian railway hundreds of miles distant. In the Sudan the camel has been the great means of transportation; in India, the ox-cart. The necessary result of the great distances and crude methods of carriage was to make transportation very difficult, precarious, expensive, and slow. Only one result was certain, to reduce the producer's net proceeds to the minimum and thus decrease the incentive to cultivate cotton.

There was but one effective method of removing these difficulties. In some cases the rivers could be improved and become navigable, but this opportunity seldom offered. In almost every case the only certain remedy was the building of railways. That was always possible, yet because of the great distances involved, heavy expenses of construction through unsettled lands, and the vast amounts of capital required, progress for many years was most exasperatingly slow.

These have been the problems to be solved. To teach savage or semicivilized peoples industries previously unknown and the way intelligently and confidently to pursue them, to furnish such market for products as to incite the grower to increase his yields, to provide sure, cheap, and speedy methods of transportation that the largest possible profit might accrue to the producer—all these were great tasks for civilized nations, governing such lands, to undertake. To carry them through to success required years of effort. No wonder that the casual American observer, seeing no immediate results and making no investigation of actual conditions, decided that all attempts at cotton growing elsewhere are doomed to failure and that the United States alone possesses the heaven-given permission to supply the world's needs of cotton and to fix its own modest renumeration therefor.

It is time therefore for us to examine what has been accomplished and consider in some detail the natural and artificial conditions as they exist today in the various countries where some measure of success has been obtained.

The first of these countries, not only because of its present great success, but also because of its bright future, is Russia. Prior to 1860 the Khanates of Turkestan, the Bactria and Sog-

diana of Alexander's Empire, were known principally as one of the world's oldest civilizations: very fertile lands, but with the worst of governments and separated from Europe by great deserts. In 1865 their conquest was begun by Russia; it was completed in 1880. The Russian government interferes as little as possible with the manners and customs of subject peoples, so this conquest speedily brought peace and prosperity to the land. In 1884 the cultivation of American upland cotton was introduced, 1,300 acres were planted, and 240 bales were produced. Since then the development has been phenomenal. Large areas in the upper regions of the Amu Darya and Syr Darya rivers have been irrigated and put in cotton and in 1902 in the single province of Ferghana 531,000 acres were in cotton.<sup>1</sup> Investigations proved that the deserts of the lower regions of these rivers and of the Trans-Caspian territory, then peopled only by wandering nomads, were really most fertile soil, needing only water. This latter district now has 300,000 acres of irrigated land in cotton. The entire crop of Turkestan in 1911 was 1,200,600 bales.<sup>2</sup> Exhaustive surveys have shown that 5,500,000 acres of supposedly desert-lands can be transformed into very fertile cotton lands by perfectly practicable irrigation.<sup>3</sup> The Russian government, which is always ready to undertake any work that will develop its natural resources, has arranged the financial requirements of the project. In October, 1911, a syndicate was formed in Moscow under state supervision to carry out the work, which it is expected to complete within ten years. Laws have been promulgated for the allotment of these irrigated lands, giving the preference to small farmers. It is expected that this work when completed will increase the Russian Turkestan cotton crop to over 4,000,000 bales.<sup>4</sup> In 1880 Russia began building east from the Caspian Sea a railway which has been completed to Samarcand, a distance of 1,085 miles. Another railway from Orenburg in Southeastern Russia, 1,470 miles long was opened in 1906 to Andidjan near the boundary of

<sup>1</sup> *International Federation of Master Cotton Spinners*, 1910, p. 210.

<sup>2</sup> U.S. Bureau of Census, *Bulletin No. 114*, 1912, p. 43.

<sup>3</sup> *International Federation of Master Cotton Spinners*, 1910, p. 211.

<sup>4</sup> *Ibid.*, p. 212.

Chinese Turkestan. Other lines are being constructed. These railways have greatly aided the phenomenal development of Turkestan's cotton resources. The fiber is of a very high grade, and Russian spinners consider it not inferior in length, luster, or strength to American upland.

Cotton culture was begun in Russian Trans-Caucasia in 1886 and has been quite successful. Already the production exceeds 100,000 bales and is increasing. Government surveys show that 1,350,000 acres can be irrigated for cotton culture, and work is to be begun in 1913. In 1908 cotton growing on a small scale was begun in the Crimea and has been successful. In 1909 it was tried in Kherson and Bessarabia in Southern Russia with good results.<sup>1</sup> Russian cotton spinning, which consumed 1,050,000 bales in 1900, required 1,596,000 in 1910,<sup>2</sup> yet the imports from the United States have not increased, the additional requirements having been almost entirely supplied by Russian cotton fields. It is now claimed that the importation of American cotton will cease within five years and that within ten years Russia will be an active competitor of the United States in supplying the world's cotton mills.

Persia has always produced cotton but, because of lack of roads and transportation, the production was restricted to the demands for home consumption. But Russia recently extended its Caucasus Railway to Julfa on the Persian border near Tabriz and the effect was immediate. Persia, which in 1890 exported 10,900 bales of cotton, in 1910 shipped to Russia 84,000, an increase of over 700 per cent.<sup>3</sup> It has large areas of very fertile lands which merely require irrigation and good transportation to become available as rich cotton fields. In the present condition of Russian and English control of Persia, the building of railways there seems only a few years distant, and the exports of cotton should then become very large.

Almost at the dawn of history Mesopotamia was a land of

<sup>1</sup> U.S. Bureau of Census, *Bulletin No. 114*, p. 46.

<sup>2</sup> *Russian Year Book*, 1912, p. 141.

<sup>3</sup> *Statesman's Year Book*, 1912, art. "Persia"; U.S. Bureau of Census, *Bulletin No. 114*, p. 43; *Encyclopaedia Britannica*, art. "Persia."

plenty and, until the Mongol invasion in 1350 destroyed its irrigation works, "the land between the rivers," the Euphrates and the Tigris, was a marvel of fertility. Cotton is still cultivated there on a small scale. The great irrigation works, now being constructed by English interests, when completed some five years hence, will convert some 3,500,000 acres into the richest land known, and over 6,000,000 acres more will be redeemed by later extensions.<sup>1</sup> The Bagdad Railway under construction from Smyrna by German interests, and now about half finished, together with the connecting English line to the Persian Gulf all of which will be complete within ten years, will furnish the best of transportation. When it is considered that the Egyptian cotton crop of 1,450,000 bales in 1911 was grown on 1,776,000 acres,<sup>2</sup> the possibilities of Mesopotamia, when it practically passes into German hands a few years hence, may be imagined. The famous English engineer, Sir W. Wilcock, who is in charge of this irrigation work, estimates the cotton production of Mesopotamia, when the entire irrigation is in action, at 4,000,000 bales per year. The German Report on Colonial Cotton Growing<sup>3</sup> says: "Asia Minor is energetically increasing cotton growing, but the principal district of the future will be Mesopotamia. Cotton could be grown there in considerable quantities, in fact Asiatic Turkey would be able to supply sufficient cotton to feed entirely the German cotton industry."

Cotton culture is progressing rapidly in Asia Minor. In Anatolia 132,500 acres are being irrigated. The report of the German Levantine Cotton Growing Company says: "When the irrigation is complete, we are not overstating the increased capacity of producing cotton if we say that 150,000 bales more can be grown."<sup>4</sup> In Cilicia there are many plantations generally owned by Armenians which are proving profitable. The railways now building will greatly increase the production, especially if the Armenian peasant farmers receive better protection. The yield

<sup>1</sup> Sir. W. Wilcock, *The Irrigation of Mesopotamia*, London, 1911.

<sup>2</sup> U.S. Bureau of Census, *Bulletin No. 114*, 1912, Table 24.

<sup>3</sup> *International Federation of Master Cotton Spinners*, 1911, pp. 150, 177.

<sup>4</sup> *Statesman's Year Book*, 1912, art. "Turkey"; *Encyclopaedia Britannica*, arts. "Asia Minor," "Cotton," "Turkey."

in 1911 was 125,000 bales of which the Adana Province alone produced 72,000 besides 21,000 bales used in home manufactures.<sup>1</sup> In Syria also cotton culture is progressing rapidly and in Palestine it is one of the chief products.<sup>2</sup>

In Western Mongolia and Chinese Turkestan are vast areas of fertile lands, formerly the seat of prosperous cities whose ruins are still visible. Much of this land is well watered by many rivers from the snow covered Himalaya and Altai ranges. Cotton is now grown in many districts to supply the home demand, but notwithstanding the almost prohibitive transportation cost, considerable quantities are carried to the railways in Siberia and Russian Turkestan.<sup>3</sup> When these countries pass into Russian control, in the near future, and railways are extended into them, they should rival even the rich cotton fields of Samarcand and Ferghana.

Cotton has been grown in Korea for centuries, but until Japan obtained control in 1904, cultivation methods were crude and development slight. Since then the culture has been stimulated in every way by the Japanese government. With an area of 86,000 square miles and a population of 13,000,000, or over 150 per square mile, there is abundant cheap labor, and the land is fertile. The production was 214,000 bales in 1908, and is increasing.<sup>4</sup> This is reflected in the Japanese imports from the United States, which have already fallen from 336,575 bales in 1905 to 156,724 in 1911, although the consumption has increased more than 50 per cent between 1900 and 1911.<sup>5</sup>

China has been growing cotton for ages. Although the country is one of the two greatest importers of cotton cloths, it is estimated that four-fifths of its needs are supplied by home hand looms. It has now steam mills with 831,000 spindles consuming 350,000 bales,<sup>6</sup> but the hand looms in cottage use consume largely over

<sup>1</sup> U.S. Bureau of Census, *Bulletin No. 114*, 1912, p. 47.

<sup>2</sup> *Baumwollkultur in Klein-Asien und Nord-Syrien*, Schlagentweit, Berlin, 1910.

<sup>3</sup> *Tibet and Turkestan*, New York, 1905, p. 84.

<sup>4</sup> *Encyclopaedia Britannica*, art. "Cotton," p. 266.

<sup>5</sup> U.S. Bureau of Census, *Bulletin No. 113*, 1911, pp. 16 and 22.

<sup>6</sup> *Ibid.*, p. 26.

that. Moreover, the exports to Japan were 380,000 bales,<sup>1</sup> so that the 1910 crop was probably over 1,200,000 bales. Practically all of China is good cotton-growing territory, and with its enormous and constantly increasing supply of good cheap labor, only adequate modern transportation and good government are needed to increase greatly its production. China proper has almost the same area as India, better soil as a whole, and better labor; and there is no apparent reason why it should not likewise produce 4,000,000 bales.

French Indo-China has an area of 256,000 square miles with 16,315,000 people. Modern cotton culture was introduced by the French government in 1890, but did not prove commercially successful until after 1900. Since then development has been rapid. Although two large mills have been built at Haiphong employing over 1,000 hands, the exports have grown from 2,000 bales in 1901, to 39,000 in 1908, and 58,000 in 1911.<sup>2</sup> With the rapid increase in railways now building, a great growth in cotton exports is expected. All this cotton goes to Japan and, with the exports from adjoining Siam, will probably soon satisfy Japan's importation requirements.

India, the oldest cotton producer, for over two thousand years has been making the finest of cotton cloths, many of which cannot be duplicated by any modern machinery. After it passed under British control constant efforts were made to increase its production, but even in 1860 its entire crop was estimated at only 1,500,000 bales.<sup>3</sup> Since then the Indian government has taken far more systematic action. It has established an Agricultural Department with observation stations in every province. Two agricultural colleges have been founded with an Imperial Research College for postgraduate work. An agricultural school is being established in every province. Instruction is being given to the ryots or peasant farmers.<sup>4</sup> Railways are being built in every

<sup>1</sup> *Op. cit.*, *Bulletin No. 114*, 1912, p. 46.

<sup>2</sup> *Statesman's Year Book*, 1912, pp. 803-4; *Le coton dans les colonies françaises*, Zolla, Paris, 1909; *Questions diplomatiques et coloniales*, Vol. XXV, 1910.

<sup>3</sup> *Cotton Trade of Great Britain*, Ellison, London, 1886.

<sup>4</sup> *U.S. Daily Consular Reports*, No. 36, February 13, 1911, p. 577.

direction, over 32,000 miles being now in operation. Irrigation canals are under construction in many districts. Cotton ginneries are to be constructed in every large producing district under government guaranties. These and many other improvements and reforms now being erected must have far-reaching effects. One main difficulty with the Indian crop has been the very light yield, averaging less than 80 pounds per acre.<sup>1</sup> The staple also is very short. Efforts have been made to introduce American upland cotton, and it is now being increasingly grown. If its culture becomes general, it would, because of its greater length and weight, at once increase the total crop. Already the area in cotton has exceeded 20,000,000 acres, and the crop has reached 4,000,000 bales,<sup>1</sup> and far greater results are expected. At the last annual Congress of the International Federation of Master Cotton Spinners, the representative of the Indian government claimed that within ten years India would produce 10,000,000 bales.

Other Asiatic countries, smaller but still of large aggregate area and population, such as Southern Manchuria, Formosa, Siam, Ceylon, Malacca, Eastern Tibet, Baluchistan, Afghanistan, and Muscat, are now all raising cotton, some in considerable quantity, which will doubtless increase when transportation facilities have improved, as all other conditions are favorable.

The continent of Africa has always been the land of hope to the cotton spinner. Its vast area, warm and generally moist climate, and negro labor, similar apparently to that in the United States, satisfied him that in Africa's sunny land unlimited quantities could quickly be grown merely by tickling Mother Earth, but as everywhere success is only obtained by effort. This has been long continued and has encountered many discouragements but the wished-for reward seems now near at hand.

Aside from the Congo Free State, Africa south of the Sahara was divided among England, France, Germany, and Portugal. England alone has possessions on all sides as well as in the interior. As the greatest consumer of cotton, she was the first to essay its culture in Africa. We will, therefore, consider her success first.

<sup>1</sup> U.S. Bureau of Census, *Bulletin No. 114*, 1912, p. 44.

British East Africa extends along the eastern coast from the equator five hundred miles north and four hundred miles inland, with an area of 200,000 square miles and over 4,000,000 population. Cotton growing was begun in 1903; the first exports were 200 bales in 1906, but the amount increased rapidly and reached 6,000 bales in 1910.<sup>1</sup> Large extensions in area are making, and the industry is on a profitable basis. This colony has about the area and population of Texas with equally good land and better climate, frost being unknown, so the possibilities for great development in its cotton culture may be seen.

In Uganda the success has been surprising. Cotton-raising is already one of the main industries, and the cotton is all grown by native farmers. The production which was 782 bales in 1906, grew to 3,849 in 1907, 5,164 in 1908, 9,659 in 1909 and over 16,500 in 1911. The *London Times*, in July, 1912, estimated the 1912 crop at 32,000 bales and predicted that the 1913 crop would exceed 50,000 bales.<sup>2</sup> These natives had reached quite a degree of agricultural development before the British occupation; and with a climate and soil so perfect, and a labor supply furnished by 3,500,000 people, far greater results should be obtained in the near future. So great has been the success in cotton growing in Uganda that the British government in August, 1912, set aside \$2,500,000 to be used in stimulating cotton cultivation in that colony.

In Nyasaland and British Central Africa, cotton culture was introduced in 1900. Several years were required to instruct and interest the native farmers, but since then the development has been remarkably rapid. The exports increased from 808 bales in 1907, 1,500 in 1908, and 2,147 in 1909 to 4,342 in 1910 and 6,000 in 1911,<sup>3</sup> all grown by native farmers; while the acreage, which was 12,752 in 1910, was 23,000 in 1911.<sup>4</sup> The cotton produced is the highest priced upland in the world, selling in Liverpool four cents a pound above American upland. When the railway

<sup>1</sup> *Directory of East Africa*, 1911.

<sup>2</sup> *Statesman's Year Book*, 1912, art. "Uganda"; *Whitaker's Almanac*, 1912, p. 593; *International Federation of Master Cotton Spinners*, 1911.

<sup>3</sup> *Statesman's Year Book*, 1912; *International Federation of Master Cotton Spinners*, 1911.

<sup>4</sup> *Geographical Journal*, London, 1912, p. 8.

to Chinde on the Indian Ocean is completed in 1913, a great impetus will be given to Nyassa cotton growing.

Rhodesia is a country of great area—some 475,000 square miles. Its soil is extremely fertile and well watered, with every variety of agricultural and mineral wealth to promote development. Its climate is almost perfect, and it is one of the few tropical lands where the white man can live and increase. Fifteen years ago it was almost unknown, but in 1911 railways had traversed it to the extreme northern boundary. It has immense areas of fine cotton lands on which systematic culture was begun in 1905. The exports have been 100 bales in 1906, 200 in 1907, 408 in 1908 and 1,000 in 1910.<sup>1</sup> The natives have now learned the proper culture, and production will quickly increase. The generally grown variety is the white Egyptian Abassi which sells at over thirty cents per pound.

Nigeria is one of England's greatest colonies. With an area of 345,000 square miles and with 17,000,000 people, it is almost an empire in itself. Northern Nigeria has possessed quite a degree of civilization for centuries. A late traveler who visited it in 1911,<sup>1</sup> says, speaking of the Kano district: "It is a revelation to see the cotton fields. The plants are all in raised rows three feet apart, the healthy shrubs, often four to five feet apart, thickly covered with yellow flowers or snowy balls of white, bursting from the split pods. . . . There is little we can teach the Kano farmer. There is much we can learn from him. Rotation of crop and green manuring are thoroughly understood and in some villages are noticed small heaps of ashes and dry animal manure deposits along the crest of cultivated ridges where the rains will wash it into the earth." All that was needed here was good government, convenient markets, and cheap transportation, and these are all being obtained. Modern cotton growing was introduced in 1900. The exports have been 25 bales in 1902, 2,098 in 1904, 4,580 in 1906, 8,180 in 1908, and 16,877 in 1910.<sup>2</sup> The report of the Colonial Department to Parliament for 1910 says, "Enormous areas are now under cotton cultivation." The locally

<sup>1</sup> *London Times*, November, 1911.

<sup>2</sup> *International Federation of Master Cotton Spinners*, 1910.

used production of the Province of Zaria in 1908 was 40,000 bales.<sup>1</sup> At the late annual meeting of the Nigeria Company it was stated that "the number of small native traders is largely on the increase."<sup>2</sup> As all the earlier difficulties are largely removed and increasing transportation facilities being constantly constructed, Nigeria should become one of the world's great cotton exporters.

England's greatest African possession is the Anglo-Egyptian Sudan. Its area is 950,000 square miles, one third as large as the United States. About two-thirds of this great territory is very fertile. It came into English control in 1899 largely devastated, having been ravaged by the Mahdist forces for twenty years, its towns destroyed and most of its population dead or driven away. In the twelve years since then, peace and good government have been restored, and the population is rapidly increasing. Railways have been built from Khartum to the Egyptian lines and to the Red Sea. In 1910 an extension of 250 miles was opened to El Obeid in Kordofan and lines are building into other provinces. The masses of "sud," which covered the rivers, obstructing navigation and causing unhealthy overflows, have been removed and steamers now run 1,000 miles west and south of Khartum. This Sudan was the birthplace of Egyptian cotton. Good government and improved transportation having been secured, the British government is now stimulating production and its success, in view of the short time since it obtained control, is most satisfactory. Aside from the quite considerable quantities used in the crude home manufacturers, 7,000 bales were exported in 1910 and 12,600 in 1911.<sup>3</sup> Large extensions of area under cotton are now being made in the Gezora Province by the construction of extensive irrigation works, and the exports are expected to increase very largely. The crops possible to be raised upon this vast area of fertile land, with its good climate and transportation facilities, are practically limited only by the labor supply. In an address to the African Society at London in February, 1912, Major Stanton, late governor of the Western Sudan, said that there was "no reason why in the years to come, the Sudan should

<sup>1</sup> *Encyclopaedia Britannica*, art. "Cotton," p. 266.

<sup>2</sup> *London Times*, August, 1912.

<sup>3</sup> *Statesman's Year Book*, 1912.

not supply all the cotton Lancashire wanted. One hundred and twenty thousand acres are now in cotton. More than double the whole cotton acreage of Egypt can be put in cotton in the Sudan."

In the other British African possessions of Transvaal, Natal, Swaziland, Socotra, Somaliland, Rodriguez, Bechuanaland, Sierra Leone, Gambia, and Gold Coast, cotton growing is steadily increasing. Nearly all of these countries have now become exporters and the amount exported, though small, is increasing.

Although the entire cultivable area of Egypt is but 7,443,000 acres, most of which is required to feed a population averaging 931 per square mile, far denser than China, India, Belgium, or Poland, the area planted in cotton increased from 1,015,000 acres in 1895 to 1,776,000 in 1911, or about 75 per cent—a rate of increase equal to that in the United States during the same period. The crop has increased over 400,000 bales in the same time, from 1,041,000 bales to 1,450,000.<sup>1</sup> Arrangements are now being made by the Egyptian government to drain one million acres of the great marshes in the Delta at the mouths of the Nile. This work, which will cost over \$15,000,000, will be completed in 1915. It will increase the area under cotton cultivation over 50 per cent. Later, other marsh areas in the Delta of even larger size are to be drained in the same manner. It is estimated that by these means the Egyptian cotton crop will be more than doubled within the next ten years.<sup>2</sup>

While the French African possessions are of larger areas than the English, they are neither so well located nor so fertile, and more difficulty was encountered in obtaining peaceful control. But within the last few years opposition has ceased and rapid development is being made. A railway 700 miles long from the seaport of Dakar in Senegal, whose modern freight handling methods could furnish a valuable lesson to the port of New York, has been opened to the upper Niger River, which with its tributaries affords navigation for thousands of miles. Other railways are building through Dahomey, to Lake Chad, to the Central Sudan, and to

<sup>1</sup> U.S. Bureau of Census, *Bulletin No. 114*, 1912, p. 45.

<sup>2</sup> *Report of U.S. Consul Birch of Alexandria, Egypt*, August, 1912.

the Congo River. An area half as large as the United States is thus being opened, every part of it extremely fertile. In every province modern cotton culture has been introduced and though it is as yet limited it is developing quickly. In Dahomey, for instance, exports which were 50 bales in 1904 were 7,410 in 1910. Upper Senegal, which exported 26 bales in 1905, shipped 1,595 in 1909. Even the famous old city of our boyhood days, Timbuctoo, shipped 1,400 bales to France in 1910 though the railroad connections were only established in 1908.<sup>1</sup> The total exportations in 1912 will probably exceed 30,000 bales in addition to large quantities used in native manufactures.

Madagascar is over a thousand miles long with 228,000 miles of area. The French are now in peaceful control and are building railways and developing its resources. Cotton is indigenous; the plant grows and produces for ten to fifteen years and has largely supplied the native demand for cloth. American upland was introduced in 1905. As the natives understand much about its culture, it is developing rapidly. The fiber thus far produced is reported to be magnificent.<sup>2</sup>

In Algeria, Tunis, French Somaliland, and Djibouti, cotton has been introduced and is already being exported moderately. The French Colonial Office confidently expects that, within ten years hence, the entire supply for the French spinners will be furnished by the African colonies and Madagascar. Close examination of the facts seems to warrant the claim.

Germany, the last nation to obtain African colonies, secured the poorest. But with characteristic patience and thoroughness the Germans are developing their resources, and with much success. Since, next to England, Germany is the largest European spinning nation, first attention was given to cotton growing. It was introduced into Togoland in 1900. A cotton college was established, buying agencies were formed, and eleven ginneries have been built. At the last annual agricultural exhibition 426 natives made exhibits, and picking matches and manuring contests

<sup>1</sup> *L'Afrique française*, Paris, 1911; *Revue française de l'étrangère*, Vol. XXXIII, Paris, 1910-11.

<sup>2</sup> *Revue de Madagascar*, Paris, 1911.

were held. All these features have been helpful. The number of native growers is rapidly increasing. In 1910, 3,400 bales were exported as against only 6 in 1901. Three railways are already in operation.<sup>1</sup>

German East Africa has an area of 384,000 square miles and over 10,000,000 population. The same instructive steps have there been taken with equally successful results. In the Tanganyika and Victoria Nyanza districts 6,000 native farmers are now growing cotton, and the exports, which were 1½ bales in 1902, reached 3,600 in 1910—practically all from small native farmers.<sup>2</sup> With the completion in 1913, of the railway to Lake Tanganyika, of which over 500 miles are now in operation, and with the resultant opening up of the fertile interior provinces extremely rapid development is expected. In March, 1911, the German Imperial Colonial office agreed to furnish the Colonial Economic Committee more funds for cotton development in the colonies. The government is also pushing the building of railways in these colonies, and by the construction of the Central Railway and the Usambara Railway in East Africa, the Togo Upland Railway, and the Kameroons Northern Railway, large districts will be opened up for cotton cultivation.<sup>3</sup>

German West Africa, though having an area of 322,000 square miles, has much poor land and but 250,000 people. Cotton culture was begun in 1908 and is progressing satisfactorily, but the exports as yet are small.<sup>4</sup>

Portuguese West Africa has 484,000 square miles of very fertile land, but a poor government. Cotton grows wild in many districts. During the American Civil War 50,000 bales were exported. In 1902 systematic culture was begun and the exports increased from 55 bales in 1903 to 1,470 in 1910. When the English-owned railway, now building from Lobito Bay on the Atlantic Coast to Katanga and Northern Rhodesia, is completed in 1913,

<sup>1</sup> *Cotton Growing in German Colonies*, 1910, pp. 182, 184.

<sup>2</sup> *Ibid.*, p. 195.

<sup>3</sup> *International Federation of Master Cotton Spinners*, 1911, p. 156.

<sup>4</sup> *Die Baumwollfrage und die Baumwollkultur in unsfern Kolonien*. Fabarins, Bremen, 1911.

a large increase of cotton output should result. Portuguese East Africa, with 300,000 miles of area, is another fertile land in which cotton is indigenous. With proper governmental aid, it would produce largely. Its exports have grown from 50 bales in 1907 to 730 in 1910. If, as now seems probable, these Portuguese colonies with 800,000 square miles of very fertile lands and 8,000,000 people are transferred to England and Germany, they are certain to become great cotton exporters.

In the Congo Free State little attention was paid to cotton until 1908, but it has now been introduced into many districts with good results. The cotton grown has a very fine fiber. Time will be needed to instruct the natives in its culture, but in a few years it will doubtless be exported in considerable quantities.<sup>1</sup>

Abyssinia is a large grower of cotton. There the plant has been cultivated for centuries. Heretofore its product has been entirely consumed in home manufactures. But in view of the approaching completion of the railways to Djibouti and Khartum the country, with its area of 432,000 square miles of largely fertile well-watered lands and with 5,000,000 semicivilized people, must ultimately become a large exporter.

Eritrea and Italian Somaliland, Italy's two African colonies, are both developing cotton culture with very satisfactory results, but thus far the entire output has been used in home manufactures.<sup>2</sup>

Although the fact is not generally known, Europe has several cotton-growing countries. Bulgaria has introduced cotton with quite satisfactory results, although time will be required to produce it in quantity. Turkey has grown it for years, and during the American Civil War its exports exceeded 60,000 bales. In 1909 its crop was 32,000 bales as against 16,000 in 1889.<sup>3</sup> Greece produced 9,000 bales in 1910.<sup>4</sup> Cyprus, which is now an English possession, has shown very favorable results in cotton, its exports

<sup>1</sup> *U.S. Daily Consular Report*, September 11, 1911, p. 1149.

<sup>2</sup> *International Federation of Master Cotton Spinners*, 1910.

<sup>3</sup> *History of the Cotton Famine*, London, 1865; *Production and Consumption of Cotton*, Conkling, New York, 1865, p. 27; U.S. Bureau of the Census, 1911, *Bulletin No. 113*, Table 20.

<sup>4</sup> U.S. Bureau of the Census, 1912, *Bulletin No. 114*, p. 47.

rising from 340 bales in 1904 to 3,000 in 1909 and 4,878 in 1911.<sup>1</sup> Every effort is being made to stimulate the production, and prosperity for the island is resulting. During the American Civil War cotton was grown in Italy and Spain. It is now being introduced again in both countries. With irrigation it is claimed that Andalusia can be made to raise 150,000 bales, or more than half as much as Spain now imports from the United States.<sup>2</sup> Even the little island of Malta grows cotton. Its crop has increased from 220 bales in 1903 to 423 in 1910.

Throughout Central and Southern America, cotton culture is progressing in every country. In the British West Indies, where, after it had been the main crop in the eighteenth century, its cultivation was entirely abandoned until it was again introduced in 1902, it has been a phenomenal success.<sup>3</sup> The cotton there produced is the very highest grade of Sea Island, and has already made England practically independent of the South Carolina product, which the West India fiber is even claimed to excel. The exports have now nearly reached 10,000 bales per year.<sup>4</sup> Porto Rico, Santo Domingo, Hayti, and the Bahamas are also producing a high grade of cotton, the Haytian crop being about 11,000 bales.<sup>5</sup>

The Mexican crop of 1911 was estimated at 150,000 bales, which almost satisfied the home spinning demand. The production was increasing and with a return of good government is susceptible of great development.<sup>6</sup> All the Central American countries grow cotton on a small scale for home use. The Guianas, Venezuela, Columbia, and Ecuador are small exporters but show a steadily increasing production.

Peru is quite an important producer. The Peruvian fiber is very

<sup>1</sup> *Cotton Growing in Cyprus*, Dunstan, London, 1911; *Statesman's Year Book*, 1912.

<sup>2</sup> *Encyclopaedia Britannica*, art. "Cotton," p. 265; *London Economist*, July, 1912.

<sup>3</sup> *Encyclopaedia Britannica*, arts. "Cotton," and "West Indies."

<sup>4</sup> *West India Bulletin*, Barbadoes, 1910, Report of Thomas Thornton, inspector Imperial Dept. of Agriculture; *Annual Report British Cotton Growers' Association*.

<sup>5</sup> U.S. Bureau of Census, 1912, *Bulletin No. 114*, p. 47.

<sup>6</sup> *Ibid.*, 1911, *Bulletin No. 113*, p. 27.

heavy and especially adapted for mixing with wool, 10,000 bales having been imported into the United States in 1911 for that use.<sup>1</sup> Its production is rapidly increasing. Exports have grown from 40,000 bales in 1903 to 95,300 in 1911,<sup>2</sup> exclusive of some 70,000 bales consumed at home. Important irrigation works are in progress which will largely increase the crop.

Chile and Patagonia exported 8,800 bales in 1910 as against 3,200 in 1900, in addition to the home consumption. Argentine, Uruguay, and Paraguay have all begun to raise cotton and especially in the Province of Corrientes in Northern Argentine it is growing on a considerable scale.<sup>3</sup> Argentine, with its vast areas, fertile lands, and fine transportation facilities, should before many years become a great cotton-producing country.

Brazil, in its vast territories much larger than the United States, has an immense area in which cotton was growing before the discovery of America and in which it has been produced ever since. Of late years the development has been quite rapid. The cotton mills have increased from 51 in 1885 to 161 in 1910, and their consumption, from 85,000 bales in 1900 to 370,000 in 1910,<sup>4</sup> while the exports have grown from 53,000 bales in 1901 to 140,000 in 1909.<sup>5</sup> In other words the production has grown from 138,000 bales in 1900 to 510,000 in 1910. The possibilities of increase in the Brazilian crop seems only limited by the labor supply.

In addition to the four continents, the Islands of the Pacific Ocean are also growing cotton. Java and Sumatra are exporting about 100,000 bales.<sup>6</sup> Borneo and New Guinea, the world's two largest islands, each larger than Texas, are both now producing and exporting on a small scale; but with perfect soil and climate and the stimulating aid of the Dutch, English, and German governments, they must become great producers. Queensland in Australia, French New Caledonia and German Bismarck and Solomon

<sup>1</sup> U.S. Bureau of Statistics, *Monthly Summary of Commerce*, June, 1912, p. 1876.

<sup>2</sup> *Statesman's Year Book*, 1912, p. 1121.

<sup>3</sup> *Estadística Agrícola Argentina*, 1910, p. 232.

<sup>4</sup> U.S. Bureau of Census, 1911, *Bulletin No. 113*, p. 26.

<sup>5</sup> *International Bureau of American Republics Bulletin*, 1909, "Cotton."

<sup>6</sup> *Regierungs Almanach Voor Nederlandsche Indie*, Amsterdam, 1911.

Islands, all of very considerable area, New Pomerania being nearly 400 miles long, are growing cotton on a considerable scale and making steady progress. New Zealand is a small exporter. The English Fiji Islands, with an area larger than Connecticut, and French Tahiti are exporters of Sea Island cotton with possibilities of expansion. Hawaii has also begun its cultivation.

To sum up, there are now, apart from the great producers of fifty years ago, seventy-two other countries which are producing and exporting cotton on a rapidly increasing scale. Aside from India, Egypt, China, and Brazil, the remaining countries, where the industry is largely of recent development, have increased their production and exports from 797,550 bales in 1900 to 2,886,177 in 1910, an increase of over 260 per cent. They are developing now at an even more rapid rate. In the same period the increase in the crop of the United States was only 17 per cent.<sup>1</sup> Sixty of these countries were not exporters and many not even producers in 1900. Bearing in mind that the long preliminary stages in nearly all of them are now over and that their cotton culture has proved practical and profitable, what they will do in 1920 can hardly be overestimated when it is remembered that every possible influence is being used to stimulate their production.

But another even more forcible presentation may be made. Russian and Chinese Turkestan and Mongolia have a combined area of 2,700,000 square miles, 500,000 of which are probably fine cotton land needing only irrigation. Mesopotamia will have 40,000 square miles of the finest cotton lands on earth. Uganda and British East Africa have an area of 325,000 miles of which 125,000 are suitable for cotton. Rhodesia, Nyassa, and the adjoining Katanga Congo District have an area of over 650,000 square miles, probably 250,000 of which are adapted to cotton. British Nigeria out of 345,000 square miles has over 125,000 of cotton area, while in the Anglo-Egyptian Sudan there must be 300,000 miles of such lands and 50,000 more in Abyssinia. In French Nigeria and Congo with an area of 1,250,000 square miles, probably 400,000 will produce cotton. In the greater part of that area it has been growing for centuries. In the Island of Madagascar,

<sup>1</sup> U.S. Bureau of Statistics, *Monthly Summary of Commerce*, June, 1912, p. 2031.

where it has been cultivated for ages, 50,000 miles will produce cotton.

In these seven large territories, all of which are extremely fertile and which have been proven especially adapted to successful cotton culture, in all of which it is indigenous and in all of which are ample supplies of cheap labor, there are 1,800,000 square miles of good lands into which cotton culture is now being successfully and profitably introduced. This figure is so vast that the mind scarcely grasps it. It means an area as large as the United States east of the Rocky Mountains. It means an area over thirty times as large as the entire cotton acreage of the United States in 1911. And yet this vast area, enormous as it is, does not include sixty other cotton producing lands which together may possibly be able to supply an equally large cultivable area.

Within the near future therefore, probably within the coming decade, cotton will be growing in a great number of countries and in quantities sufficient for the world's requirements even though they be greatly increased meanwhile. When that point is reached, its price will be fixed solely by the natural laws of supply and demand, and with so many and such widely separated sources of supply, no speculative interests can longer control that price.

No pretense of denial has ever been made that the almost preconcerted joint action of these European nations, in aiding and stimulating even with public moneys the culture of cotton in their colonies, was undertaken primarily to make their great spinning industries absolutely independent of the American supply. There is no denial on their part of the superior quality of American cotton, nor, in most years when normal conditions control, is objection made to its price. But there is a universal demand throughout Europe that these great industries shall be effectively and permanently released from the dominance of the American speculative manipulation which in 1903-4 and again in 1909-10-11 caused them such great loss, a loss estimated by speakers at the last meeting of the International Spinners Federation in 1911 at over \$500,000,000.

What will be the effect upon the United States of this world-

wide development of cotton culture? We as a nation have so long flattered ourselves that a gracious providence had created this fertile land for our sole benefit and had made all other nations dependent upon us for supplies of Nature's gifts of the soil, that we long since decided to consider ourselves independent of the workings of all natural and economic laws.

But we are told that history repeats itself and so may fairly consider the past as an index to the future. In the early years of this century, when the Trans-Siberian Railway was lately opened, much discussion resulted as to the wheat raising possibilities of Siberia and the Russian empire. So in 1904 the United States Bureau of Statistics published a monograph treating quite fully of the Russian agricultural development and especially with reference to its competition with the United States in the wheat and cotton supply of the world. Another monograph on Japan was also presented. Today these papers<sup>1</sup> make singularly interesting reading.

For instance, we are told: "Russian wheat exports make but little progress while American exports show large and continuous growth. For the last three years the American shipments were almost double those from Russia." But what happened? In 1903 the American wheat exports were 211,906,000 bushels, as against 111,512,000 from Russia; and almost 60 per cent of the world's wheat exports were supplied by the United States. But certain very philanthropic citizens of Chicago, having studied these statements and conditions, persuaded the American farmer that if he wished to become prosperous, his wheat should be stored at home and not sold to Europe and these good gentlemen would meanwhile force up the price. And the result of that rise in price was that in 1910 Russia exported 224,736,000 bushels<sup>2</sup> or nearly 58 per cent of the world's requirements, while the United States shipped but 69,311,765 bushels.<sup>3</sup> From being the leader the United States has fallen to the fifth rank among the world's wheat exporting nations.

<sup>1</sup> U.S. *Statistical Abstract No. 8*, Series 1903-4, pp. 2755-2869.

<sup>2</sup> U.S. *Daily Consular Reports*, No. 241, October 14, 1911, p. 330.

<sup>3</sup> U.S. Bureau of Statistics, *Monthly Summary of Commerce*, June, 1911, pp. 1995, 1996.

The same monograph, speaking of the Russian cotton production, said: "Recent developments do not seem to bear out the original expectation that this region [Turkestan] would within a short period produce all the cotton required by the Russian industry, thus making it independent of a foreign supply and the vicissitudes of the American cotton market." But what have been the actual results? The Turkestan crop, which was 353,800 bales in 1902 reached 1,200,000 in 1911.<sup>1</sup> An increase of 240 per cent in ten years (fifteen times as great as that of the United States in the same time) would seem a fairly rapid growth.

In like manner the monograph on Japan called attention to its rapid spinning development yet emphasized its complete dependence on America for its cotton supply. But, although the cotton consumption of Japan since that date has greatly increased, it has found cheaper sources of supply and its imports of raw cotton from the United States which were 336,575 bales in 1905 fell to 156,724 in 1911.<sup>2</sup> From the present outlook, Japan will, before many years, be entirely independent of the American supply.

Thirty years ago the American control of Sea Island cotton production was universally admitted. Many countries had tried its cultivation but all failed. South Carolina planters fixed its price arbitrarily and even refused to sell any seed. But with the financial aid and the supervision of the English government, it was re-introduced into the West Indies, became a complete success there and is now being grown on the islands of the Pacific Ocean. As a result the American exports of Sea Island cotton have fallen from 30,455 bales in 1890 to 17,797 in 1911.<sup>3</sup>

We have learned that with our wheat and our corn and our oats, with our cattle and our meats, the world's markets are perfectly willing to take our entire surplus whenever we are satisfied to sell it at a reasonable price. Thus, for example, in 1911 our cotton crop of over 16,000,000 bales, by far the largest we have ever produced found ready and anxious European buyers because our asking price was a fair one. But whenever we have tried to compel the purchase of our products at prices fixed by the manipulation of speculators, our foreign customers have stopped their

<sup>1</sup> U.S. Bureau of Census, 1912, *Bulletin No. 114*, p. 43.

<sup>2</sup> *Ibid.*, 1911, *Bulletin No. 113*, p. 16.

<sup>3</sup> *Ibid.*, p. 17.

purchases. And as no country can now for a long time possess a monopoly of agricultural products, we have seen ourselves already displaced as the principal sellers of wheat, corn, oats, and cattle or meats by other countries anxious to market their surplus at fair prices uncontrolled by speculative manipulations.

In the entire ten years from 1893 to 1902 the extreme fluctuation in midland spot cotton between highest and lowest price was a trifle over 5 cents per pound in the New York market. Changes were caused almost entirely by purely legitimate forces such as weather conditions, size of crop, or consuming demand. In five of these years the extreme fluctuation was  $1\frac{5}{8}$  cents per pound and in eight of the years it did not exceed  $2\frac{3}{4}$  cents per pound. But in 1903 the first important speculative manipulation began. Cotton rose from 9.65 cents per pound in October to 17.25 cents on February, 1, 1904, a rise of 7.6 cents or nearly 80 per cent, and dropped 3.50 cents in two weeks, a greater change than in eight of the preceding entire years. It rose to 16.45 cents on March 15, and dropped to 10.80 cents on June 25, a fall of 5.65 cents in three months or more than the extreme fluctuation in the preceding ten years. These wild and entirely speculative changes caused enormous losses to the spinning interests and initiated the bitter feelings toward the American markets which have since become so worldwide, because with the value of the raw material almost doubling in four months profitable or even safe manufacturing became almost impossible.

In 1904-5 the same speculation continued, although on a smaller scale, the price of spot cotton dropping from 11.75 cents in September to 7 cents in December and rising again to 11.25 cents in July, 1905, a change of over 60 per cent in value. Again, the price of spot cotton rose from 8.50 cents in November, 1908, to 12.70 cents in July, 1909, or over 50 per cent advance. Then, beginning in September, it rose 4 cents per pound, broke 3 cents per pound in ten days in December, and rose to 16.10 cents in January, 1910; again broke 2.50 cents in twenty days, and finally rose to 20 cents per pound in August, making a total increase in price, from the low point, of nearly 85 per cent. In the season of 1910-11 there was further manipulation, although not to so great an extent.

As already stated, this extreme and unlimited speculation has

caused to the spinning interests a loss estimated at over \$500,000,000. In debates in Parliament, Reichstag, and Duma it has been officially given as the reason why governmental financial aid should be extended in stimulating cotton cultivation in colonial possessions so that the European spinning industries might be freed from the burden of American speculative manipulation. Commercial exchanges and textile associations in all parts of the world have taken a most decided stand for the same action. How bitter the feeling has become may be seen by the following extract from an editorial in the *London Economist*, the leading European commercial and financial authority, on the Russian cotton industry:

The duty [Russian import duty], the present shortage, and the disturbance caused by American speculators has resulted in prices so high that the Russian manufacturers are beginning to declare that they prefer to spend their millions in schemes for the production of cotton at home rather than pour them into the pockets of American monopolists.

The future of our cotton trade, our greatest single article of export, seems now in the balance. The manipulation of our cotton exchanges, which has so repeatedly brought such severe losses to the world's spinning industries, has embittered the entire world against further American control of that fiber and has brought a fixed determination for relief from that control at any cost. What has already been accomplished toward that end has been detailed. What the future will bring about may be plainly foreseen. Already the change is beginning to be observable. In 1889 the cotton crop of the United States was  $63\frac{1}{2}$  per cent of the world's production. But in 1909 it was only  $59\frac{1}{2}$  per cent<sup>1</sup> and in 1912 it will probably be about  $58\frac{1}{2}$  per cent. This shows plainly that we are already losing our relative position and that it will apparently require but a few years more to make the American crop less than one-half of the world's production. Unless we can greatly increase our crops by improved methods of culture and can be content to sell our output at reasonable competitive prices in the open markets of the world, we must expect to be compelled to take a lower rank in the list of the world's suppliers of cotton just as we have already been forced to do in the cases of so many other of our leading agricultural productions.

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<sup>1</sup> U.S. Bureau of Census, 1911, *Bulletin No. 113*, p. 29.